Biodiversity Data Journal 13: e175847
doi: 10.3897/BDJ.13.e175847

Taxonomy & Inventories

Contribution to the subfamily Panchaetothripinae (Thysanoptera, Thripidae) from Saudi Arabia, with two new genera records and an illustrated key

Iftekhar Rasool‡, Amin N Al-Ansi‡, Hathal Mohammed Al Dhafer§

‡ King Saud University Museum of Arthropods (KSMA), Department of Plant Protection, College of Food and Agriculture Sciences, King Saud University, P.O. Box 2460, Riyadh 11451, Saudi Arabia
§ King Saud University, College of Food and Agriculture Sciences, Riyadh, Saudi Arabia

Corresponding author: Iftekhar Rasool (irasool@ksu.edu.sa), Amin N Al-Ansi (amohammed1@ksu.edu.sa)

Academic editor: Fedor Konstantinov

Received: 23 Oct 2025 | Accepted: 10 Nov 2025 | Published: 20 Nov 2025

Citation: Rasool I, Al-Ansi A, Al Dhafer H (2025) Contribution to the subfamily Panchaetothripinae (Thysanoptera, Thripidae) from Saudi Arabia, with two new genera records and an illustrated key. Biodiversity Data Journal 13: e175847. https://doi.org/10.3897/BDJ.13.e175847

Abstract

Background

The subfamily Panchaetothripinae Bagnall (Thysanoptera, Thripidae) comprises about 150 species belonging to 42 genera worldwide. Amongst these, twelve species belonging to six genera were previously recorded from the Arabian Peninsula, including eight species in four genera from Saudi Arabia. The Faunistic studies on the subfamily have been confined to the tropical and subtropical parts of Africa, America, Southeast Asia and Australia. However, the tropical regions of the Arabian Peninsula remained under-studied, with no considerable work having been done on this subfamily.

New information

We present the first illustrated key to the Panchaetothripinae genera of the Arabian Peninsula and a checklist of Arabian species to facilitate their recognition. Moreover, two genera and species, *Hercinothrips femoralis* (Reuter) and *Rhipiphorothrips cruentatus*

© Rasool I et al. This is an open access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Hood, are recorded as new to Saudi Arabia. New distributional data for each species is also given. The presence of greenhouse thrips *Heliothrips haemorrhoidalis* Bouche in the country is doubtful. The species has not been recovered despite extensive surveys across the country spanning over six years. However, it is kept in the Arabian species list until further confirmations.

Keywords

Arabian Peninsula, checklist, distribution, *Hercinothrips*, new records, *Rhipiphorothrips*

Introduction

The subfamily Panchaethripinae comprises about 150 species belonging to 42 genera (ThripsWiki 2025). The species are predominantly distributed across tropical regions of the world. The majority of species are native to the Old-World tropics, in Africa and Southeast Asia; however, a small number are endemic to Australia and South America (Mound 2009). In the Arabian Peninsula, twelve species belonging to six genera have been previously recorded (Table 1), eight of these species in four genera being recorded from Saudi Arabia (Rasool et al. 2023). All of these species have been collected from the southern part of the Peninsula (Oman, southwest of Saudi Arabia, United Arab Emirates and Yemen) (zur Strassen 1990, Mirab-balou 2018, Rasool et al. 2023), which is an Afrotropical region in nature, supported by several studies (Larsen 1984, Hölzel 1998, Abdel-Dayem et al. 2018). However, none of these species is known from Bahrain, Kuwait and Qatar that are situated to the northeast of the Peninsula. The distributional trend of the Panchaethripinae suggests that the southwest area of Saudi Arabia harbours notable diversity in this subfamily with further exploration needed in the region. The presence of greenhouse thrips *Heliothrips haemorrhoidalis* Bouche in the country is doubtful, as that was enlisted by Martin (1972) without any substantial details. The species has not been recovered despite the extensive surveys conducted in all kinds of natural and agroecosystems and greenhouses during 2019–2025.

Table 1.

A checklist of the Panchaetothripinae species from the Arabian Peninsula. The species with one asterisk (*) indicates a new record for Saudi Arabia and two asterisks (**) indicate the species was previously known from Saudi Arabia, but not recovered during this study.

Species name	Bahrain	Iraq	Kuwait	Oman	Qatar	Saudi Arabia	United Arab Emirates	Yemen
Caliothrips sudanensis (Bagnall & Cameron, 1932)	-	-	-	-	-	I	-	-
Caliothrips indicus (Bagnall, 1913)	-	I	-	-	-	-	-	-
Caliothrips helini Hood, 1940	-	-	-	-	-	I	-	I

Species name	Bahrain	Iraq	Kuwait	Oman	Qatar	Saudi Arabia	United Arab Emirates	Yemen
Caliothrips luckmanni Wilson, 1975	-	-	-	-	-	I	-	-
Caliothrips oneillae Faure, 1962	-	-	-	-	-	I	-	-
Caliothrips quadrifasciatus (Girault, 1927)	-	-	-	-	-	I	I	I
Phibalothrips peringueyi (Faure, 1925)	-	-	-	-	-	I	-	-
Rhipiphorothrips cruentatus Hood, 1919*	-	-	-	I	-	I	-	-
Retithrips syriacus (Mayet, 1890)	-	I	-	-	-	I	I	I
Hercinothrips femoralis Reuter, 1891*	-	-	-	-	-	I	-	I
Hercinothrips tenuis Hartwig, 1948	-	-	-	-	-	-	-	I
Heliothrips haemorrhoidalis (Bouche, 1833) **	-	-	-	-	-	I	-	-
Total	**0**	**2**	**0**	**1**	**0**	**10**	**2**	**5**

Species of the Panchaethripinae can be recognised amongst other subfamilies of Thripidae by a strongly reticulated head and body; long and needle-like terminal antennal segment, III–IV usually with long apical neck; first vein of fore-wing almost fused with coastal vein near base; meso and metasternal furca transverse, without median spinula (Masumoto 2010). The objective of this article is to present an illustrated diagnostic key to Panchaethripinae genera, a checklist to the Arabian species and to record *Hercinothrips* Bagnall and *Rhipiphorothrips* Morgan for the first time from Saudi Arabia.

Materials and methods

The current study is based on fresh collections of thrips from the southwest provinces of Saudi Arabia using beating sheets (BT). Collected specimens were preserved in 80–95% ethanol. Slides were prepared by using stereomicroscope from Meiji Techno EMZ–10 Series 7X–45X Zoom. The images were produced by using an automontage software system (Syncroscopy, Cambridge, UK), attached to a phase contrast microscope (DM2500, Leica®, Germany).

Abbreviations

KSMA: King Saud University Museum of Arthropods, Riyadh, Saudi Arabia. **BT**: Beating sheet.

Taxon treatments

Hercinothrips Bagnall, 1932

Nomenclature

Hercinothrips Bagnall, 1932: 506. Type species: *Heliothrips bicinctus* Bagnall 1919. Type locality: Belgium.

Taxon discussion

The genus *Hercinothrips* is an old-world genus that consists of ten species worldwide. All of the species are described from Africa, except *H. splendens* Goldaracena and Vierbergen from Netherlands, *H. femoralis* (Reuter) from Finland and *H. bicinctus* (Bagnall) from Belgium (ThripsWiki 2025). The latter two species are widespread in the tropical and subtropical countries, the first of these being a pest particularly in greenhouses and the second has been recorded as damaging banana plants (Moritz et al. 2013, Mound and Wells 2015). In the Arabian Peninsula, the two species, *H. femoralis* and *H. tenuis* Hartwig, are known from Yemen (zur Strassen 1990); however, the genus is recorded for the first time from Saudi Arabia. The species of this genus are unusual amongst Panchaetothripinae genera in having both veins of fore-wings with a complete row of setae (Lima et al. 2020). The other characters are 8-segmented antennae, with segments III and IV bearing forked sense cones; 2-segmented tarsi (Fig. 2f); head with weak transverse ridge posteriorly, visible as a small projection laterally (Fig. 3b).

Hercinothrips femoralis (Reuter, 1891)

Nomenclature

Heliothrips femoralis Reuter, 1891: 166. Type locality: Finland.

Material

a. country: Saudi Arabia; stateProvince: Jazan; locality: Al Aridha, Sala Mountains, Wadi Rough; verbatimElevation: 631 m; verbatimLatitude: 17°01'52.2; verbatimLongitude: 43°08'16.5; samplingEffort: BT; eventDate: 23/2/2024; individualCount: 1 ♀; lifeStage: adult; recordedBy: Rasool, I.; occurrenceID: EE66A9EE-1F2E-566A-82F0-C0B8CBDC4F12

Diagnosis

Fully mature female with brown body (Fig. 5a); head with two longitudinal yellow areas or yellowish anteriorly with posterior brown area (Fig. 3b); antennal segment II and VI–VIII brown, III–V yellow, except IV and V light brown at apex (Fig. 1b); pronotum with variably light brown spots; legs yellow with mid and hind femora brown; fore-wings with sub-basal area and apex pale, with median area variably

brown (Fig. 2b). The species is very close to *H. bicinctus* in general appearance and features; however, it can be distinguished by: antennal segments VI–VIII brown (Fig. 1 b); median pale area of fore-wings absent (Fig. 2b). In contrast, in *H. bicinctus*, antennal segments VI–VIII are yellow and median pale area of fore-wings about 2.0 times as long as first dark cross band (Goldaracena and Vierbergen 2022).

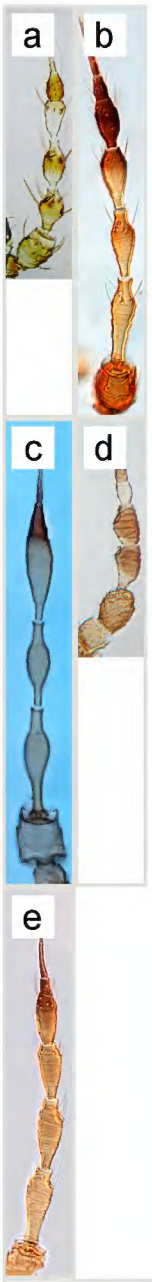

Figure 1.

Antennae:

a: *Caliothrips helini* Hood; doi
b: *Hercinothrips femoralis* Reuter; doi
c: *Phibalothrips peringueyi* (Faure); doi
d: *Retithrips syriacus* (Mayet); doi
e: *Rhipiphorothrips cruentatus* Hood. doi

Distribution

The species was described from Finland and is now widespread across North, Central and South America, throughout Africa, Europe, tropical and subtropical Asia, Australia and New Zealand (Moritz et al. 2013).

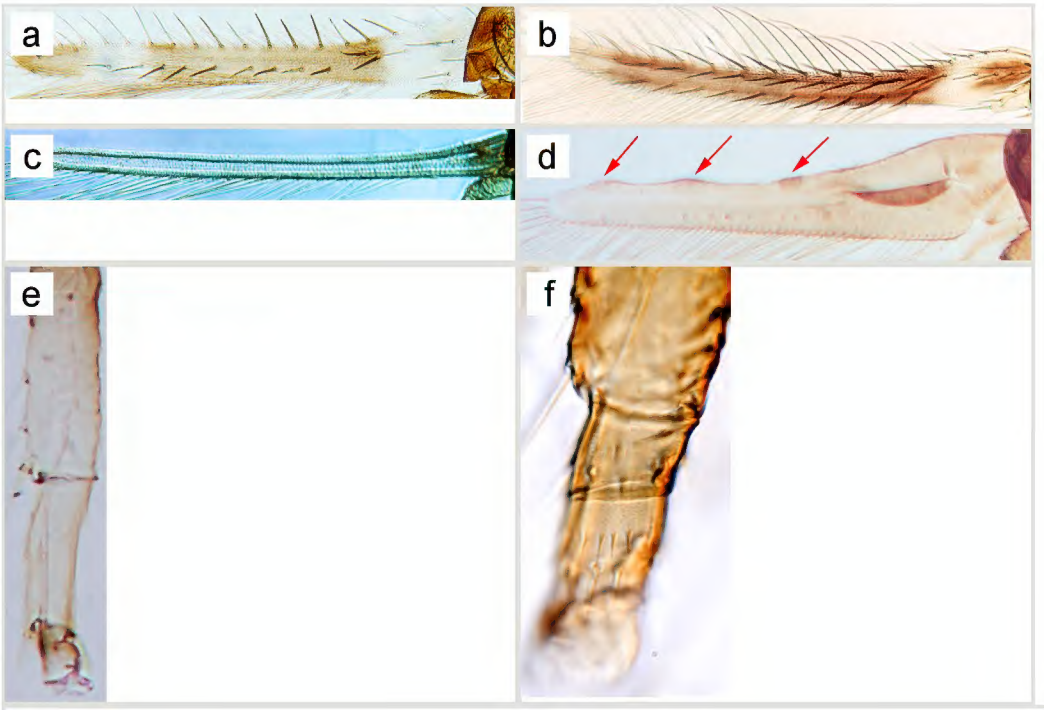

Figure 2.

Forewings (a-d); Tarsi (e-f):

a: *Caliothrips helini* Hood; doi
b: *Hercinothrips femoralis* Reuter; doi
c: *Phibalothrips peringueyi* (Faure); doi
d: *Retithrips syriacus* (Mayet); doi
e: *Caliothrips luckmanni* Wilson; doi
f: *Hercinothrips femoralis* Reuter. doi

Rhipiphorothrip Morgan, 1913

Nomenclature

Rhipiphorothrips Morgan, 1913: 17. Type species: *Rhipiphorothrips pulchellus* Morgan, 1913. Type locality: Sri Lanka.

Taxon discussion

The *Rhipiphorothrips* is an Old World palaeotropical genus, comprising five species. Two of these are known from tropical Africa and three from tropical Asia and China (Wilson 1975, ThripsWiki 2025). In the Arabian Peninsula, the genus was known only from Oman (Mirab-balou 2018) and is recorded for the first time from Saudi Arabia. The members of the genus are unique amongst other Panchaetothripinae genera by having strongly rugose sculpture on head, pronotum and body surface. It is close to *Australothrips* Bagnall, *Phibalothrips* Hood and *Retithrips* Marchal in lacking fringed cilia on the fore-wing anterior margins. However, these genera have polygonal reticles on the head instead of rugose sculptures as in *Rhipiphorothrips* (Wilson 1975). The other important characters of the genus include: 8-segmented antennae, without microtrichia, segments III–IV with simple (*Rh. cruentatus* and *Rh. pulchellus*) or forked (*Rh. africanus*, *Rh. concoloratus* and *Rh. miemsae*) sense cones (Wilson 1975, Zhang and Tong 1993); fore-wings anterior margin without cilia cf (Fig. 2c); tarsi

1-segmented; mesonotum completely divided medially with a longitudinal suture (Fig. 3f); metanotum raised, sculptured, in shape of inverted triangle (Fig. 3f); abdominal tergites III–IX with rugose sculpture laterally, each with median depression and polygonal reticules medially and comb-like microtrichia at anterior margin (Fig. 4b); tergites IX and X with setae on hind margin short and fan-shaped at apices (Fig. 4d).

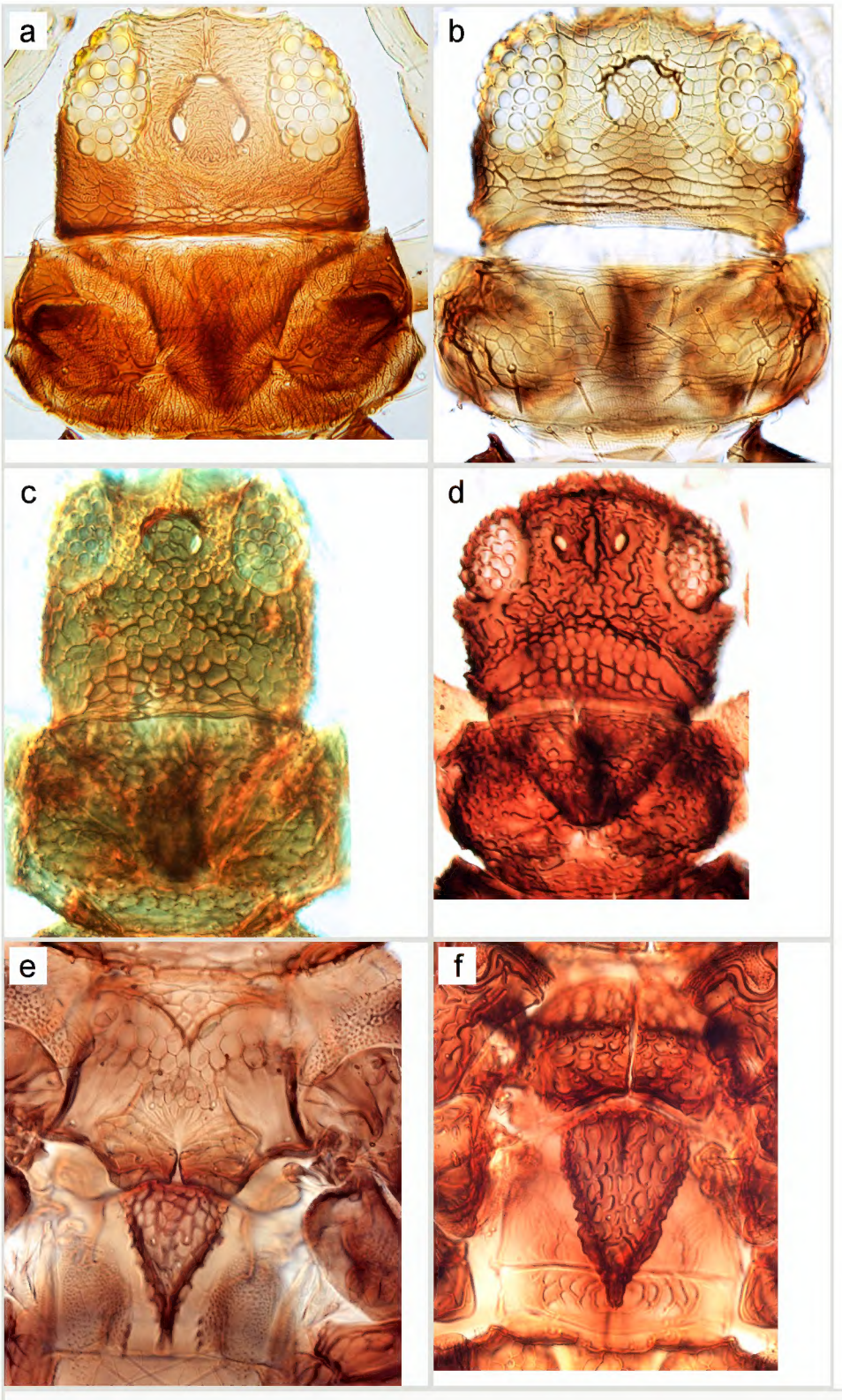

Figure 3.

Head and pronotum (a-d); Meso and metanotum (e-f):

a: *Caliothrips quadrifasciatus* (Girault); doi
b: *Hercinothrips femoralis* Reuter; doi
c: *Phibalothrips peringueyi* (Faure); doi
d: *Rhipiphorothrips cruentatus* Hood; doi
e: *Phibalothrips peringueyi* (Faure); doi
f: *Rhipiphorothrips cruentatus* Hood. doi

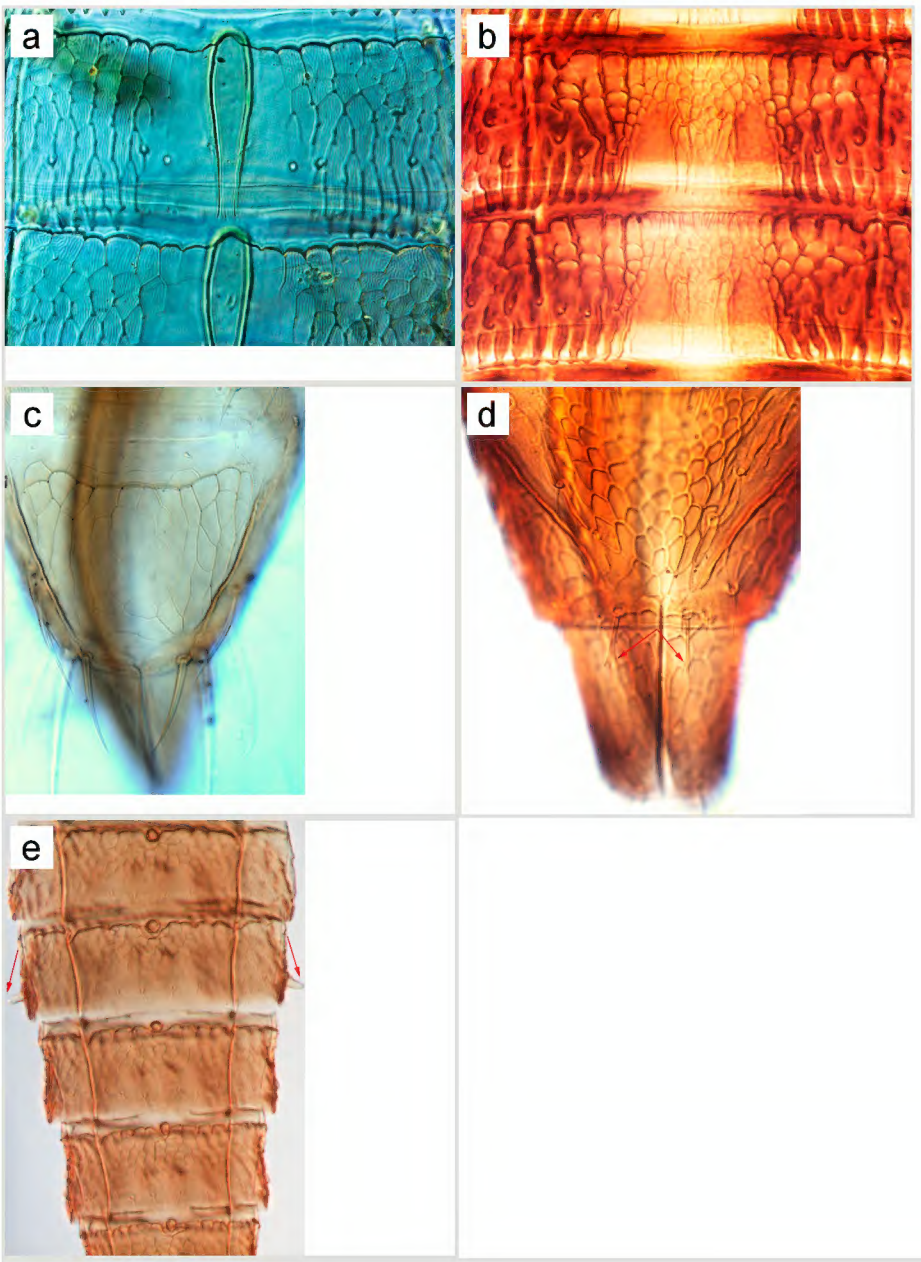

Figure 4.

Abdominal tergites III–V (a-b); Abdominal tergites VIII-X (c-d); male sternite (e):

a: *Phibalothrips peringueyi* (Faure); doi
b: *Rhipiphorothrips cruentatus* Hood; doi
c: *Phibalothrips peringueyi* (Faure); doi
d: *Rhipiphorothrips cruentatus* Hood; doi
e: *Rhipiphorothrips cruentatus* Hood. doi

Rhipiphorothrips cruentatus Hood, 1919

Nomenclature

Rhipiphorothrips cruentatus Hood, 1919: 94. Type locality: India.

Material

a. country: Saudi Arabia; stateProvince: Tabouk; locality: Umluj; verbatimElevation: 57 m; verbatimLatitude: 25°04'03.0; verbatimLongitude: 37°17'31.3; samplingEffort: SW; eventDate: 9/2/2022; individualCount: 6♀2♂; lifeStage: adult; recordedBy: Rasool, I.; occurrenceID: 40427E8B-02AE-5BDF-9383-C8856D9E906F

Diagnosis

Female dark brown (Fig. 5b); antennae and legs yellow, antennal segment VI at apex and VII–VIII light brown (Fig. 1e); fore-wings pale with light brown base. Male strongly bicoloured with head, pronotum meso and metanotum dark brown, antennae, abdomen and legs yellow (Fig. 5c). This species is close to *Rh. pulchellus* in general features and sharing the simple sense cone on antennal segments III–IV (Fig. 1e). However, it can be identified by the dark brown female and bicoloured male; male with small, circular pore plate at anteromedian margin of sternites III–VII and is unique in having a prominent tooth-like lateral processes on abdominal segment IV (Fig. 4e). In contrast, *Rh. pulchellus* female is characterised by yellow pronotum and male lacks tooth-like lateral process on abdominal segment IV (Wilson 1975).

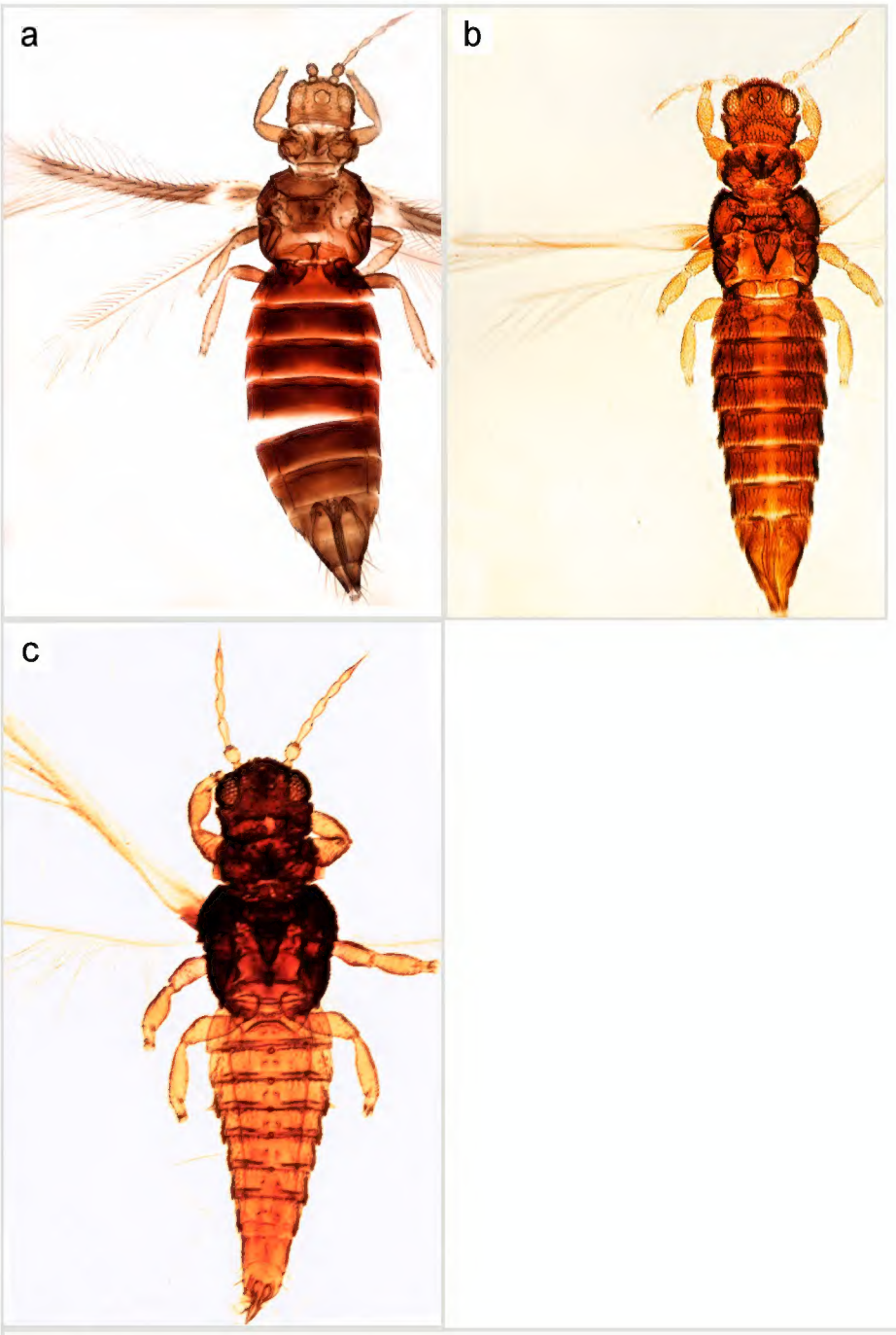

Figure 5.

Adult females (a-b); Adult male (c):

a: *Hercinothrips femoralis* Reuter; doi

b: *Rhipiphorothrips cruentatus* Hood; doi

c: *Rhipiphorothrips cruentatus* Hood. doi

Distribution

The species was described from India, where it is widespread in most of the Indian States. It is also known from Afghanistan and west Pakistan (Wilson 1975), Bangladesh, Burma, China, Iran, Myanmar, Sri Lanka, in Arabian Peninsula from Oman (Mirab-balou 2018) and is new to Saudi Arabia.

Identification keys

Key to the Panchaetothripinae genera from Arabian Peninsula

[*Heliothrips** not examined, adapted from Silva et al. (2024)]

1	Fore-wings anterior margin without cilia (Fig. 2c, d)	2
–	Fore-wings anterior margin with cilia (Fig. 2a, b)	4
2	Fore-wings broad, anterior margin with three protruding callosities (Fig. 2 d); antennal segments III–IV, each with forked sense cones	***Retithrips***
–	Fore-wings long, slender, parallel-sided, without callosities or tubercles (Fig. 2c); antennal segments III–IV, each with simple sense cones (Fig. 1c , e) (rarely forked)	3
3	Antennae 7-segmented (Fig. 1c); head with polygamical sculptures (Fig. 3c); fore-wings second vein without setae; mesonotum entire, not divided medially (Fig. 3e); abdominal tergites II–VII smooth medially, with median lobate longitudinal ridge (Fig. 4a); setae S1 on abdominal tergites IX–X with pointed apex (Fig. 4c)	***Phibalothrips***
–	Antennae 8-segmented (Fig. 1e); head with rugose sculptures (Fig. 3d); fore-wings second vein with setal row complete; mesonotum divided medially with a longitudinal suture (Fig. 3f); abdominal tergites sculptured medially, without any lobate ridge (Fig. 4b); setae S1 on abdominal tergites IX–X with dilated apex (Fig. 4d)	***Rhipiphorothrips***
4	Tarsi 2-segmented (Fig. 2f); both fore-wing veins with complete row of setae (Fig. 2b); head with weak occipital ridge, a small projection visible posterolateral (Fig. 3b)	***Hercinothrips***
–	Tarsi 1-segmented (Fig. 2e); fore-wings vein with setal rows widely spaced and incomplete (Fig. 2a); head without occipital ridge (Fig. 3a)	5
5	Head and pronotum sculptures smooth, without internal markings; antennal segments III–IV each with simple sense cones; metanotum with prominent sculptured triangle; hind coxae simple	***Heliothrips****

–	Head and pronotum sculptures with internal markings (Fig. 3a); antennal segments III–IV each with forked sense cones (Fig. 1a); metanotum normal, without triangle; hind coxae with prominent coiled internal apodeme	***Caliothrips***

Acknowledgements

The authors are grateful to the Acarology section of King Saud University Museum of Arthropods for permitting the use of their automontage system to produce the images. The authors would like to thank Ongoing Research Funding program (ORFFT-2025-130-1), King Saud University, Riyadh, Saudi Arabia for financial support.

Author contributions

Iftekhar Rasool

Conceptualisation, Writing - Original draft, Investigation, Methadology and Validation

Amin N. Al-Ansi

Writing- review and editing, Data curation and investigation

Hathal M. Aldhafer

Funding acquisition, Resources, Supersivion, Validation

References

- Abdel-Dayem M, Rasool I, Elgharbawy A, Nagel P, Aldhafer H (2018) Faunistic inventory and zoogeographical analysis of the ground beetles (Coleoptera, Carabidae) of Garf Raydah Nature Reserve, Southwestern of Saudi Arabia, and description of a new species of Paussinae. Zootaxa 4514 (3). https://doi.org/10.11646/zootaxa.4514.3.3
- Goldaracena A, Vierbergen G (2022) A key to species of *Hercinothrips*, with one new species, and a neotypedesignation for *H. trilineatus* (Priesner). Zootaxa 5169 (4): 322-330. https://doi.org/10.11646/zootaxa.5169.4.2
- Hölzel H (1998) Zoogeographical features of Neuroptera of the Arabian Peninsula. Acta Zoologica Fennica 209.
- Larsen T (1984) The zoogeographical composition and distribution of the Arabian butterflies (Lepidoptera; Rhopalocera). Journal of Biogeography 11 (2). https://doi.org/10.2307/2844685
- Lima ÉFB, O'Donnell CA, Miyasato EA (2020) The Panchaetothripinae (Thysanoptera, Thripidae) of Brazil, with one new *Caliothrips* species. Zootaxa 4820 (2). https://doi.org/10.11646/zootaxa.4820.2.1

- Martin H (1972) Report to the Gov. of Saudi Arabia. On research in Plant Protection F.A.O. Entomologist,.
- Masumoto M (2010) Key to genera of the subfamily Thripinae (Thysanoptera: Thripidae) associated with Japanese plant quarantine. Research Bulletin of the Plant Protection Service 46: 25-59.
- Mirab-balou M (2018) An updated checklist of Iranian thrips (Insecta: Thysanoptera). Far Eastern Entomologist 361: 12-36. https://doi.org/10.25221/fee.361.2
- Moritz G, Brandt S, Triapitsyn S, Subramanian S (2013) Identification and information tools for pest thrips in East Africa. Available from:. URL: https://thripsnet.zoologie.uni-halle.de/key-server-neu/data/0a0b0a0e-0d03-4106-8306 08060a080902/media/Html/Hercinothrips%20bicinctus.html
- Mound L (2009) New taxa and new records of Australian Panchaetothripinae (Thysanoptera, Thripidae). Zootaxa 2292 (1). https://doi.org/10.11646/zootaxa.2292.1.3
- Mound L, Wells A (2015) Endemics and adventives: Thysanoptera (Insecta) biodiversity of Norfolk, a tiny Pacific Island. Zootaxa 3964 (2). https://doi.org/10.11646/zootaxa.3964.2.2
- Rasool I, Alattal YZ, Aldhafer H (2023) Faunistic inventory, identification keys and zoogeographical analysis of the Thysanoptera-Terebrantia of Saudi Arabia, including two new species. Zootaxa 5306 (2): 151-200. https://doi.org/10.11646/zootaxa.5306.2.1
- Silva LDMR, O'Donnell C, Lima ÉFB (2024) Species identity crisis among New World members of the genus *Heliothrips* (Thysanoptera: Thripidae: Panchaetothripinae). Zootaxa 5489 (1): 153-172. https://doi.org/10.11646/zootaxa.5489.1.11
- ThripsWiki (2025) ThripsWiki - providing information on the World's thrips. https://thrips.info/wiki/Rhipiphorothrips. URL: https://thrips.info/wiki/Main_Page
- Wilson T (1975) A monograph of the subfamily Panchaetothripinae (Thysanoptera: Thripidae). Memoirs of the American Entomological Institute 23: 1-354.
- Zhang W, Tong X (1993)) Notes on some Panchaetothripinae species from Xishuangbanna, with description of a new species (Thripidae: Thysanoptera). Journal of South China Agricultural University 14 (2): 51-54.
- zur Strassen R (1990) Thysanoptera in plantations in the Yemen Arab Republic. Proceedings of the III International Symposium on Thysanoptera.